Life history of the Philippine endemic butterfly *Faunis sappho* (Nymphalidae, Satyrinae, Amathusiini) on Bohol island, with the first record of a dipteran parasitoid (Tachinidae, Exoristinae, Eryciini) for the genus and a listing of hostplant families utilized by the tribe

Cristy Burlace[1] & Keith V. Wolfe[2]

1. M4X2+33W, Highway Poblacion, Bilar, Bohol, Philippines (boholhabitat@gmail.com); 2. 616 Alumrock Drive, Antioch, California 94509, USA (bflyearlystages@comcast.net)

Date of issue online: 18 March 2022
Electronic copies (ISSN 2575-9256) in PDF format at: https://journals.flvc.org/troplep; https://zenodo.org; archived by the Institutional Repository at the University of Florida (IR@UF), http://ufdc.ufl.edu/ufir; **DOI**: 10.5281/zenodo.6360556
© The author(s). This is an open access article distributed under the Creative Commons license CC BY-NC 4.0 (https://creativecommons.org/licenses/by-nc/4.0/).

Abstract: The early stages of *Faunis sappho sappho* Semper, 1878 are described for the first time, including images of ova, all instars, and pupae, from livestock occurring in a private garden on Bohol island, Philippines. The numerous monocotyledon hostplants confirmed to be naturally used by this poorly understood butterfly are enumerated, and the first record of a parasitic fly for the genus is reported. References to the published immature stages and comparisons to final-instar larvae of the other eight species of *Faunis* are presented, plus a list of all known host genera for the tribe Amathusiini is detailed from the second author's personal database. Thus, this paper represents the most comprehensive account of the juvenile biology of any *Faunis* species as well as probably the Amathusiini.

Pagbubuod: Sa kauna-unahang pagkakataon, ang iba't ibang yugto ng life cycle ng paruparong *Faunis sappho sappho* Semper, 1878 ay nailarawan mula sa isang pribadong hardin sa isla ng Bohol sa Pilipinas. Kabilang sa mga naobserbahan at nakuhanan ng larawan ay ang itlog, lahat ng instar ng uod, at pupa. Ang ilan sa mga monocotyledon na halamang pagkain nitong hindi pa gaanong napag-aaralang species ng paruparo ay nakumpirma, at naitala rin sa unang pagkakataon ang isang parasitikong langaw para sa genus ng *Faunis*. Iprinesenta rin dito ang mga sanggunian na tumatalakay sa iba't ibang yugto ng life cycle ng paruparo at ang paghahambing sa huling instar ng uod ng walo pang species ng *Faunis*. Nakadetalye na rin ang listahan ng lahat ng kilalang genera ng halamang pagkain ng tribung Amathusiini mula sa personal na rekord ng ikalawang may-akda. Ang sulating ito ay naglalahad ng pinakakomprehensibong ulat ukol sa life cycle ng mga species ng *Faunis* maging na rin ng tribung Amathusiini.

Additional key words: Arecaceae, Asia, Asparagaceae, biogeography, *Drino*, Heliconiaceae, *Isosturmia*, Odonata, Pandanaceae

INTRODUCTION

The genus *Faunis* Hübner, 1819 contains nine species, all of which occur only in southeastern Asia: *Faunis aerope* Leech, 1890; *Faunis canens* Hübner, 1826; *Faunis eumeus* Drury, 1773; *Faunis gracilis* Butler, 1867; *Faunis kirata* de Nicéville, 1891; *Faunis menado* Hewitson, 1863; *Faunis phaon* Erichson, 1834; *Faunis sappho* Semper, 1878; and *Faunis stomphax* Westwood, 1858 (Brower, 2009; Nakamura *et al.*, 2010; Savela, 2022). Two of these species, *F. phaon* and *F. sappho*, are restricted to the Philippines, with *F. stomphax* narrowly extending into Palawan from Borneo (Igarashi & Fukuda, 2000). Regarding the former two endemics, *F. phaon* is widely distributed across the country except Palawan Province (Aoki *et al.*, 1982), while *F. sappho* is known only from the East Visayan-Mindanao biogeographic/faunal region (*sensu* Vane-Wright, 1990). Treadaway & Schroeder (2012) record four subspecies for the Philippine Islands: nominate *F. s. sappho* on Bohol, the subject of this report; *Faunis sappho ameinokleia* Fruhstorfer, 1911, on Camiguin de Mindanao; *Faunis sappho dinagatensis* Aoki & Uémura, 1982, on Dinagat; and *Faunis sappho kleis* Semper, 1878, on Biliran, Camotes, Homonhon, Leyte, Panaon, Samar, and Siargao (Fig. 1).

The early stages of six species of *Faunis*, commonly called "fauns", have been published in color by such authors as Igarashi & Fukuda, 2000 (*F. menado* and *F. stomphax*); Lang, 2011 (*F. aerope*); Leong, 2011 (*F. canens*); Wolfe & Feurtado, 2021 (*F. phaon*); and Young *et al.*, 2007 (*F. eumeus*). Larval images of what are almost certainly *F. gracilis* from Malaysia and *F. kirata* from Borneo and Malaysia are in the possession of KVW thanks to like-minded colleagues and photographers, thus leaving *F. sappho* presented here as the last member of the genus to have its mature caterpillar illustrated. It should be noted that *F. sappho* has the most limited range of any *Faunis* (Fig. 1), which does not overlap (is allopatric with) that of *F. phaon*, the other endemic Philippine faun.

STUDY LOCATION AND METHODS

Faunis sappho was reared at Habitat Bohol Highland

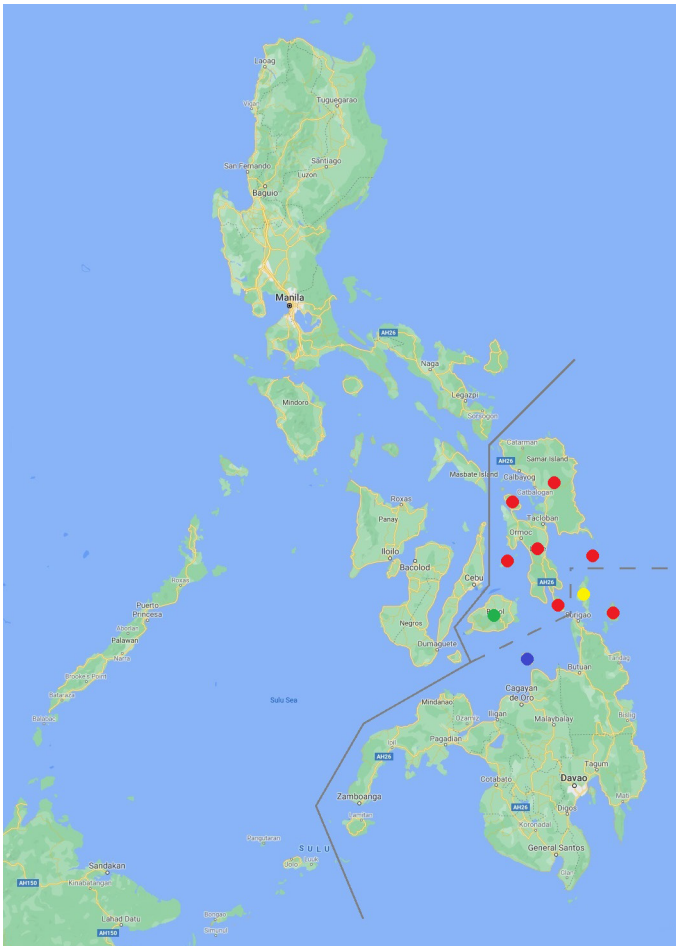

Figure 1. Consensus map ex Vane-Wright, 1990, Fig. 6 showing East Visayan-Mindanao faunal region and distribution of *Faunis sappho* subspecies (Treadaway & Schroeder, 2012): ssp. *sappho*, green; ssp. *ameinokleia*, blue; ssp. *dinagatensis*, yellow; and ssp. *kleis*, red. Note that *F. phaon*, the other Philippine endemic, occurs almost everywhere else excluding Palawan, where *F. stomphax* flies.

Nature Resort (9°41'52.0"N 124°06'01.0"E), a biodiversity and conservation project located in Bilar municipality, Bohol island-province, Philippines, where the species is common year-around in the private specialty garden. The climate type there is classified as tropical monsoon at an elevation of ~300 m. The decision to raise this secretive butterfly was made in October 2020 after many larvae were discovered on several different naturally growing local plants that had been recently moved from outside into large plastic pots and then placed in a big open-air restaurant. These transplanted caterpillars were not monitored due to seemingly large numbers of predatory ants, spiders, etc., but rather a controlled breeding program was developed that would document the immature biology of *F. sappho* utilizing the same species of plants that were now known to be eaten in the wild. Indeed, on one subsequent occasion, a female flew into the unenclosed restaurant and deposited eight eggs on a *Heliconia psittacorum* L.f., 1782 (Heliconiaceae), at 11:30 h. Thus, beginning in May 2021, four females were briefly confined inside a netted basket with five different live plants, viz *Areca catechu* L., 1753 (Arecaceae); *Bambusa multiplex* (Lour.) Raeusch. ex Schult. & Schult.f., 1830 (syn. *B. glaucescens*) (Poaceae, Bambusoideae) - unlike the others, merely a suspected possibility; *Dracaena aubryana* Brongn. ex É.Morren, 1860 (syn. *D. thalioides*) (Asparagaceae); *H. psittacorum*; and *Pandanus amaryllifolius* Roxb. ex Lindl., 1829 (Pandanaceae). Rearing was accomplished under ambient conditions (daily average 28° C, 77% RH) on open potted plants, sleeved potted plants, and with cut rain-cleansed fresh leaves replenished every day in carefully maintained, covered, translucent plastic containers. All resulting adult butterflies were promptly released unharmed back into the garden, with a few at first temporarily relaxed in a chiller for sexing purposes. Two voucher specimens, a male and female, were frozen and, along with a selection of shed larval head capsules, all of which are currently in the first author's possession, will be bequeathed to the National Museum of Natural History in Manila.

RESULTS AND DISCUSSION

With the exception of the tested *Bambusa*, which received no ova, seven groups consisting of 49 individual eggs were laid on the other four plants: *A. catechu*, 7 eggs in two groups of three and four; *D. aubryana*, 12 eggs in one group; *H. psittacorum*, 8 eggs in one group; and *P. amaryllifolius*, 22 eggs in three groups of six, seven, and nine. In the interest of efficiency, it was decided to focus the remaining breeding efforts on only *A. catechu*, *H. psittacorum*, and *P. amaryllifolius*, as the young caterpillars that resulted from the 12 eggs oviposited on *D. aubryana* had difficulty feeding on that plant's hard, thick leaves and soon died. Previous observations in the same location suggest that older *F. sappho* larvae, perhaps in their fourth instar, may fare better on this particular *Dracaena*, while an unidentified congener with softer leaves that is not part of the present study is readily eaten by all instars of *F. sappho*.

Besides the five plant species presented to females as described above, *F. sappho* juveniles seen in the outside garden during the end of 2020 and later were also recorded on four additional hostplants, namely a second and third palm, *Chamaedorea seifrizii* Burret, 1938 and *Heterospathe elata* Scheff., 1876 (both Arecaceae); a second *Dracaena*, the so-called lucky bamboo, *Dracaena braunii* Engl., 1892 (syn. *D. sanderiana*) (Asparagaceae); and a second lobster-claw, *Heliconia latispatha* Benth., 1846 (Heliconiaceae). Information from these earlier *in situ* wild eggs and/or caterpillars is included below in the descriptions of immatures. In all, at least eight different hosts from four monocot families are naturally used by *F. sappho* on Bohol, a hostplant trait common in the genus *Faunis*, while related genera in the tribe Amathusiini feed upon a wide variety of these and other monocots plus one gymnosperm (see addendum). Notably, of the aforesaid eight plants, only two of the palms, *A. catechu* and *H. elata*, are native to the Philippines, while the others are exotics from the Americas and western Africa or introduced from Indonesia (Pelser *et al.*, 2011; POWO, 2021).

Faunis sappho early stages

The following findings are a consolidation of the data obtained from livestock raised on open potted plants, sleeved potted plants, and cut fresh leaves inside covered, translucent

Figure 2. Ova of *Faunis sappho sappho* on *Heliconia psittacorum* (Heliconiaceae) with larval heads clearly visible one day before hatching.

Figure 5. Dorsal view of third instars of *Faunis sappho sappho* on *Pandanus amaryllifolius* one day after molting.

Figure 3. Dorsal view of first instars of *Faunis sappho sappho* on *Pandanus amaryllifolius* (Pandanaceae) five days after emerging and showing considerable plant material within their translucent bodies.

Figure 6. Dorsal view of fourth instars of *Faunis sappho sappho* on *Heliconia psittacorum* four days after molting.

Figure 4. Dorsal view of second instars of *Faunis sappho sappho* on *Areca catechu* (Arecaceae) three days after molting.

Figures 7-8. Dorsal [7, above] and lateral [8, below] views of fifth instar of *Faunis sappho sappho* on *Pandanus amaryllifolius* four days after molting and five days prior to becoming prepupal.

plastic containers. Body measurements were of resting caterpillars and did not include the caudal "tails" and head "horns", which were progressively longer with each successive molt and thus could have easily added as much as five millimeters to their length by the final instar. All such measurements were made opportunistically and do not necessarily represent results from the same individuals.

Ova: Round, smooth, and creamy greenish blue when newly laid. Eggs are placed in closely spaced groups of 3-12 with a brownish latitudinal "ripening ring" - essentially the outline of the developing larval head within - appearing on the second day. Measured diameter 1.5 mm (n = 1), duration ~8 days (Fig. 2).

Eggs were deposited on either the underside or upperside of expanded hostplant leaves, the preferred location being along or

Figure 9. Lateral view of prepupa of *Faunis sappho sappho* ex *Pandanus amaryllifolius* nine days into its fifth instar and one day before pupating.

Figures 10-11. Dorsal [10, left] and lateral [11, right] views of wild pupae of *Faunis sappho sappho* on *Areca catechu* four days after pupating and nine days prior to eclosing.

near the center length of the midrib. Only one ovum (infertile) out of 49 did not hatch, with one monitored group emerging before 05:30 h. Eggshells were partially to fully consumed.

First-instar larvae: Upon hatching, caterpillars are cream color with long, white, fine body hairs, smooth light brown heads with scattered shorter black hairs, and two tiny, dark pointed tails. Their cream bodies gradually turn yellowish green as ingested hostplant becomes increasingly visible through the shiny translucent cuticle. Day four saw development of four thin, light, longitudinal dorsal lines and what looks like a row of lateral dark spots. Maximum measured body length ~8 mm (n = 6), weighted average duration 7 days (Fig. 3).

Second-instar larvae: Similar to preceding instar, but their bodies are now dark green with the four longitudinal dorsal lines clearly white and distinct, and a black end to the abdomen. The white body hairs are much longer, while the prolegs and spiracular spots are light orange with the true legs and short tails appearing paler. Heads are now a richer shade of brown and, in addition to the earlier black hairs, crowned with a pair of concolorous, short, truncated spinose horns. Maximum measured body length ~21 mm (n = 4), shed head capsule maximum width 1.4 mm (n = 5), duration 6-9 days (Fig. 4).

Third-instar larvae: Similar to preceding instar, but their bodies are now black with all other colors being brighter, while the white body hairs are much longer and more dense. A thick creamy white line below and thinner wavy white line above the spiracles are now prominent. The truncated head horns, which face forward, are stouter with the top setae arranged in a five-point star with a sixth spine in the middle of the array. Maximum measured body length 30 mm (n = 7), shed head capsule maximum width 2.1 mm (n = 5), duration ~6 days (Fig. 5).

Fourth-instar larvae: Similar to preceding instar, but their body hairs are now longer, denser, and more brownish, especially on the thoracic segments. The four white longitudinal dorsal lines are now centered with three greenish lines and the abdominal end is no longer black. The tails and head horns are proportionally bigger, while the prolegs have taken on a pinkish hue. Maximum measured body length ~41 mm (n = 9), shed head capsule maximum width 3.0 mm (n = 1), duration 6-8 days (Fig. 6).

Fifth/last-instar larvae: Similar to preceding instar, but with their tails, horns, and dense now auburn-and-white long hairs well developed, as is a rich body patterning. Beginning in the late fourth instar but more prevalent in the fifth, a triangular black patch appears below the horns on both sides of the coronal sulcus that is accompanied by a similar darkening of the adfrontal area and around the stemmata. Maximum measured body length 55 mm (n = 17), shed head capsule maximum width per Dyar's Rule 4.5 mm, weighted average duration 9 days (Figs. 7 & 8).

Gregarious throughout their caterpillar development but staying in no consistent formation, the first instars remained together near where they hatched for feeding, resting, and molting, while in subsequent instars up to maturity, larvae

Figure 12. Female parasitoid fly *Drino* sp. or *Isosturmia* sp. (Tachinidae) "waiting" very close to group of mature caterpillars of *Faunis sappho sappho* resting only slightly out of frame on *Heliconia psittacorum* leaf (see text).

Figure 13. Newly emerged well-marked ♀ *Faunis sappho sappho* ex *Pandanus amaryllifolius* resting on non-hostplant leaf.

Figure 14. Typical habitat where *Faunis sappho sappho* is often observed in study area on Bohol island. This shady path, which is roughly 50 m long and damp most of the year, is bordered by stands of *Pandanus*, various palms, and *Heliconia*, but not many flowering plants. Other butterflies seen here include *Papilio rumanzovia*, *Eurema hecabe*, *Parantica vitrina*, *Elymnias congruens*, and *Yoma sabina*.

could be found either with the original number of individuals or in smaller groups on either surface of the hostplant leaf. Presumably, resting and molting would most often take place on the underside of leaves in the wild. The caterpillars on all hostplants ate mainly in the afternoon starting about 14:00 h and through the night, though eating in the morning between 08:30 and 09:30 h was sometimes seen. Neonates traveled to the edge of their natal leaf to initiate feeding, which is also where the larvae usually regrouped after molting or moving to a new hostplant leaf. As is normal with many butterfly species, caterpillar colors faded considerably prior to each ecdysis. The shed exuviae were eaten in the earlier instars but not in later ones, which is perhaps due to the increased amount of dense body hairs. No active defensive behavior was noticed when the larvae were occasionally touched or moved during routine husbandry, at which time they did not seem to react in any significant manner, but rather simply fell freely and curled upon landing. Besides the parasitoid discussed in the next section, the only other predator encountered was a small spider that ate a batch of very young first instars being reared inside a container.

Prepupae: Coloration is the same as last instar, but they are now substantially paler (faded) and their bodies look contracted. Measured body length 38 mm (n = 1), duration 1 day (Fig. 9).

Regardless of their hostplant, all larvae pupated between late evening (~20:00 h) and early the next day (~06:00 h), with the latter period appearing to be the usual time judging from the freshness of pupae in the morning. The open potted and sleeved caterpillars chose the underside of leaves, rachises, framing, and other supports, while the container larvae suspended themselves from the top lid.

Pupae: Hanging vertically by their cremasters from fashioned silk pads, they are unmarked, smooth, and apple-green after hardening, with whitish spiracles and bifurcated head projections that taper to golden points. Measured end-to-end length 29 mm, width 10 mm, distance between horn tips 4.5 mm (n = 1), duration 12-13 days (Figs. 10 & 11).

Although pupation sometimes occurred side by side in confinement, such a situation is unlikely to happen in the wild where caterpillars were observed to wander away from their hostplant in search of a safe place to pupate. Both sexes typically emerged overnight and during the early morning hours, with an occasional adult eclosing later; Fig. 13 shows such a newly emerged female at 13:29 h. Of the first 19 ex *A. catechu* and ex *P. amaryllifolius* imagoes to eclose (the *H. psittacorum* larvae died of a probable virus in their final instar), five were males and 14 were females. The total developmental time from oviposition to adult emergence was roughly 63 days, with the faster growing *P. amaryllifolius* caterpillars (potted host and container fed) taking 57 days and the slower growing *A. catechu* larvae (container fed) requiring 69 days. No conclusion was reached whether this disparity of approximately 12 days was due to the hostplant or breeding regime.

Tachinidae parasitoid

Two separate adult fly parasitoids were recorded during this study, which represents the first documentation of a Tachinidae-*Faunis* association (James O'Hara, pers. comm.). On 24 June 2021, four last-instar *F. sappho* that had been naturally developing on an open potted *P. amaryllifolius* began behaving differently and thus were suspected of being parasitized. These caterpillars were moved into individual, covered, translucent plastic containers where on 27 June 2021, three days later, an unrecorded number of fly larvae and puparia were found on the container bottoms. Images were available for only one such unfortunate caterpillar, a close examination of which showed the characteristic large blackened spot on abdominal segments two and four. One of the maggots was chosen for completion, with a female fly eclosing on 15 July 2021 and photographically identified by three tachinid specialists as either *Drino* Robineau-Desvoidy, 1863 or *Isosturmia* Townsend, 1927 (formerly a subgenus of *Drino*). This adult specimen was not retained.

The second encounter occurred nearby on 28 June 2021 when a female Tachinidae was seen to remain stubbornly next to a group of final instars resting on an open potted *H. psittacorum*. During the brief period of observation, the fly was not seen to land upon nor interact with the caterpillars in any manner. An image of this subsequent tachinid (Fig. 12) was sent to the same three experts who had unanimously agreed on its determination - *Drino* sp. or *Isosturmia* sp.

Comparison with congeners

Compared to the other eight species of *Faunis*, mature *F. sappho* larvae are very similar to those of *F. canens* (Malaysia; Leong, 2011) and *F. phaon* (Luzon; Wolfe & Feurtado, 2021) in being dark brown with lighter longitudinal dorsal and lateral lines, while *F. menado* and *F. stomphax* (Sulawesi and Palawan respectively; Igarashi & Fukuda, 2000) are black with indistinct longitudinal dorsal stripes and prominent orangish spiracular marks. In contrast, *F. gracilis* (Malaysia; KVW, pers. image) has black dorsal and subdorsal patches separated by shades of brown, white, and/or yellow, while *F. kirata* (Borneo; KVW, pers. image) looks even more atypical in being brown with a middorsal line of broken black streaks bordered by broad whitish bands. The only Chinese congeners, *F. aerope* (Lang, 2011) and *F. eumeus* (Young *et al.*, 2007), are distinctive in having reddish orange dorsums. With the exception of *F. gracilis* and *F. kirata* whose pupae are presently unknown, the pupae of the other six species appear almost identical to what is pictured here for *F. sappho*. The amount of coverage and detail in the foregoing six published reports varies greatly.

Adult behavior

On Bohol island, *Faunis sappho* is found in shady humid habitats where the hostplants grow nearby. They can also be seen in thinly forested areas flying along narrow trails (Fig. 14) or around small clearings that have an accumulation of old damp leaves. Sunny, drier environments and thick woodlands are avoided, apparently due to a lack of suitable hostplants in those locations, as are wide-open places. The butterfly is fairly active all year and for much of the day, but more so in the morning about 08:00 h than in the afternoon around 16:00 h; later sightings are most likely females searching for hostplants. Even during cloudy, cool weather, adults are still regularly observed.

Faunis sappho is normally encountered as single individuals, though occasionally when high emergence has occurred in a preferred area with many hostplants due to optimal seasonal conditions, up to half a dozen adults can be seen at the same time along such favored trails. The first author has photographed them resting on a leaf 0.5 m high at 13:34 h and basking in a sunny spot on the ground at 14:18 h. Their flight is always low to the ground, below 0.5 m and mainly then just skimming the forest floor. It is swift and purposeful, lasting only a short distance before the butterfly stops and rests for a while until continuing, thus it never travels far. Females, presumably intent on laying eggs, spend only about two or three seconds on an inappropriate leaf before flying to the next.

Faunis sappho adults have been photographed feeding on what appear to be civet dung at 08:31 h, a fallen cracked seedpod at 08:43 h, a damp forest-floor leaf at 08:54 h, bird excreta at 10:28 h, smashed possible figs at 10:29 h, a broken coconut at 12:07 h, and a fallen ripe "chico" (sapodilla) fruit at 14:15 h. Neither sex has been observed visiting flowers. They are predated by the widespread dragonfly *Orthetrum serapia* Watson, 1984 (Libellulidae), a lone such encounter being photographed at 10:07 h in an open garden where the subject butterfly rarely flies.

ACKNOWLEDGMENTS

The authors extend their gratitude to Drs. Takuji Tachi (Kyushu University, Fukuoka), John Stireman III (Wright State University, Ohio), and especially Hiroshi Shima (Kyushu University Museum, Fukuoka) for their time and expertise in

determining the adult tachinid parasitoids, while Dr. James O'Hara (Canadian National Collection of Insects, Ontario) provided initial valuable assistance. Our thanks too to friends at PhiLep Inc. for their admirable translation of the abstract into Tagalog, with the first author also saying "salamat" to Allan Ganub, Marlon Jaque, and Trifon Jaque of her staff at Habitat Bohol Highland Nature Resort for their help in setting up the rearing arrangements. We furthermore greatly appreciate the time and effort expended on our behalf by the editor and two anonymous reviewers.

LITERATURE CITED

Aoki, T., Yamaguchi, S., Uémura, Y. 1982. *Butterflies of the South East Asian Islands Vol. 3: Satyridae, Amathusiidae, Libytheidae*. Tokyo, Plapac Co., Ltd. (in Japanese).

Brower, A. V. Z. 2009. Faunis *Hübner 1819 (the Fauns). Version 16 November 2009 (under construction).* http://tolweb.org/Faunis/70772/ Accessed 9 February 2022.

Chazot, N., Condamine, F. L., Dudas, G., Peña, C., Kodandaramaiah, U., Matos-Maraví, P., Aduse-Poku, K., Elias, M., Warren, A. D., Lohman, D. J., Penz, C. M., DeVries, P., Fric, Z. F., Nylin, S., Müller, C., Kawahara, A. Y., Silva-Brandão, K. L., Lamas, G., Kleckova, I., Zubek, A., Ortiz-Acevedo, E., Vila, R., Vane-Wright, R. I., Mullen, S. P., Jiggins, C. D., Wheat, C. W., Freitas, A. V. L., Wahlberg, N. 2021. Conserved ancestral tropical niche but different continental histories explain the latitudinal diversity gradient in brush-footed butterflies. *Nature Communications* 12: 5717.

Igarashi, S., Fukuda, H. 2000. *The Life Histories of Asian Butterflies Vol. 2.* Tokyo, Tokai University Press.

Lang, S.-Y. 2011. Immature stages of *Faunis aerope* (Leech, 1890) (Lepidoptera, Nymphalidae). *Atalanta* 42(1-4): 221-222.

Leong, T. M. 2011. Caterpillars and metamorphosis of the Common Faun, *Faunis canens arcesilas* (Stichel, 1933) in Singapore (Lepidoptera: Nymphalidae: Morphinae). *Nature in Singapore* 4: 355-361.

Nakamura, N., Wakahara, H., Miyamoto, T. 2010. Notes on the butterflies of Laos (V): description of a new subspecies of *Faunis aerope* (Leech, 1890) (Lepidoptera, Nymphalidae, Morphinae) from a montane area of Central Laos. *Transactions of the Lepidopterological Society of Japan* 60(4): 277-284.

Pelser, P. B., Barcelona, J. F., Nickrent, D. L. (Eds.). 2011. *Co's Digital Flora of the Philippines*. https://www.philippineplants.org/ Accessed 9 February 2022.

POWO. 2022. POWO, *Plants of the World Online: Facilitated by the Royal Botanic Gardens, Kew.* http://www.plantsoftheworldonline.org/ Accessed 9 February 2022.

Savela, M. 2022. *Lepidoptera and some other life forms.* https://ftp.funet.fi/index/Tree_of_life/insecta/lepidoptera/ditrysia/papilionoidea/nymphalidae/morphinae/faunis/ Accessed 9 February 2022.

Treadaway, C. G., Schroeder, H. G. 2012. Revised checklist of the butterflies of the Philippine Islands (Lepidoptera: Rhopalocera). *Nachrichten des Entomologischen Vereins Apollo* Suppl. 20: 1-64.

Vane-Wright, R. I. 1990. *The Philippines - Key to the biogeography of Wallacea?*, pp. 19-34. *In*: Knight, W. J., Holloway, J. D. (Eds.), *Insects and the Rain Forests of South East Asia (Wallacea)*. London, The Royal Entomological Society of London.

Wolfe, K. V., Feurtado, M. R. 2021. Casual observations on the juvenile biology of *Faunis phaon* (Nymphalidae: Satyrinae, Amathusiini), a poorly understood Philippine endemic butterfly. *News of the Lepidopterists' Society* 63(4): 192-194.

Young, J. J., Yiu, V., Yau, S. M. 2007. *A Photographic Monograph on Hong Kong Butterflies, Volume 1.* Hong Kong, Hong Kong Lepidopterists' Society Limited.

Addendum: The following list of Amathusiini hostplant families was gleaned by the second author from many dozens of books, reports, personal communications, scientific websites, etc., over the course of 25+ years of study. Although often included in the tribe by a number of well-known sources, the genera *Morphopsis* (on Pandanaceae) and *Xanthotaenia* (on Zingiberaceae) are excluded here because of their very atypical (for Amathusiini) larvae (lack of hirsuteness and characteristic head horns) and pupae. The tribe is confined to Asia and utilizes only monocots except for a lone gymnosperm.

AMATHUSIINI GENERA AND HOSTPLANT FAMILIES REPORTEDLY USED

Aemona (3 spp.) > viz. *amathusia*, *lena*:
* Arecaceae
* Poaceae
* Smilacaceae

Allaemona (1 sp.)
* unknown

Amathusia (14 spp.) > viz. *phidippus*:
* Arecaceae
* Musaceae

Amathuxidia (3 spp.) > viz. *amythaon*:
* Arecaceae

Discophora (11 spp.) > viz. *celinde*, *lepida*, *necho, ogina*, *sondaica*, *timora*:
* Arecaceae
* Poaceae, Bambusoideae
* Poaceae, Panicoideae

Enispe (5 spp.) > viz. *euthymius*, *lunatum*:
* Poaceae, Bambusoideae

Faunis (9 spp.) > *aerope*, *canens*, *eumeus*, *gracilis*, *kirata*, *menado*, *phaon*, *sappho*, *stomphax*:
* Araceae
* Arecaceae
* Asparagaceae
* Cycadaceae
* Heliconiaceae
* Hypoxidaceae
* Musaceae
* Orchidaceae
* Pandanaceae
* Smilacaceae

Hyantis (1 sp.) According to the species-level phylogeny generated by Chazot *et al.* (2021), *Hyantis* groups outside the Amathusiini.
* unknown

Melanocyma (1 sp.) > *faunula*:
* Arecaceae

Stichophthalma (10 spp.) > viz. *howqua*, *neumogeni*, *suffusa*:
* Arecaceae
* Poaceae, Bambusoideae
* Poaceae, Micrairoideae
* Poaceae, Panicoideae

Taenaris (27 spp.) > viz. *artemis*, *butleri*, *catops*, *dimona*, *gorgo*, *honrathi*, *horsfieldii*, *mailua*, *myops*, *onolaus*, *phorcas*:
* Arecaceae
* Asparagaceae
* Costaceae
* Cycadaceae GYMNOSPERM
* Flagellariaceae
* Hypoxidaceae
* Musaceae
* Orchidaceae
* Pandanaceae
* Poaceae, Micrairoideae
* Poaceae, Panicoideae
* Smilacaceae

Thaumantis (4 spp.) > viz. *diores*, *odana*:
* Arecaceae
* Poaceae, Bambusoideae

Thauria (2 spp.) > viz. *aliris*:
* Arecaceae

Zeuxidia (10 spp.) > viz. *amethystus*, *aurelius*, *doubledayi*:
* Arecaceae

AMATHUSIINI HOSTPLANT FAMILIES USED BY GENERA IN RANK ORDER

* Arecaceae - 11
* Poaceae, Bambusoideae - 4
* Musaceae - 3
* Poaceae, Panicoideae - 3
* Smilacaceae - 3
* Asparagaceae - 2
* Hypoxidaceae - 2
* Orchidaceae - 2
* Pandanaceae - 2
* Poaceae, Micrairoideae - 2
* Araceae - 1
* Costaceae - 1
* Flagellariaceae - 1
* Heliconiaceae - 1
* Cycadaceae GYMNOSPERM (only non-monocot) - 1